WWW Integration of FAA and SWA Birdstrike Reporting Systems By Capt Stanley D. Clark

The Federal Aviation Agency (FAA) Birdstrike Reporting System has historically been a manual, "pen and paper" system since its inception. Because it has been so laborintensive, birdstrike reporting by Southwest Airline Pilots could best be described as "sporadic" as long as the FAA system operated outside the internal airline system. By using web-based reporting systems, with imbedded checks and balances, Southwest Airlines has achieved a dramatic increase in birdstrikes reported to the FAA.

Development Process

Pilots are required to fill out FAA Form 5200-7 (exhibit 1) after encountering a birdstrike. As you know, this form is lengthy and complex, and it is common knowledge that Pilots abhor paperwork. As a result, it is safe to assume that numerous birdstrikes went unreported, at least to the FAA.

Southwest Airlines Flight Operations Manual (FOM) procedures require the Captain, upon discovering and/or encountering a birdstrike, to: notify Dispatch; call maintenance to inspect, clean and fix any damage to the aircraft; make an aircraft logbook entry; fill out and forward an Irregularity Report (IR) (exhibit 2) to Company management; fill out and forward the FAA Birdstrike Report to Company management; and finally, mail the Birdstrike report to the FAA. A lot of steps to follow and a lot of paperwork to fill out!

The Company would process the IR but first had to wait for the IR to arrive. The Captain would hand-deliver the IR/Birdstrike Report Form to the in-box of the Pilot Base Coordinator. They would almost never mail it; that would cost money. The Base Coordinators would retype the data from the paper form into the Script Irregularity Reporting program used to track IR's by SWA. (Script was a very basic database management program.) The paper IR, along with the Birdstrike Report form, would then go to the Pilot Base Chief Pilot for his review. Once reviewed there, the paperwork would be sent to Dallas via the SWA internal mail system.

At SWA Headquarters, Flight Operations reviewed it, then forwarded a copy of the FAA Birdstrike Report form to the SWA Safety Office to record the event. Needless to say, this was a long and complicated process that required weeks to complete. There were many points along the way where the report could be lost, delayed or left incomplete. It required everyone at each step to do their part, all dependent on the Captain completing two separate FAA Birdstrike reports: one for the company; and, one for the FAA.

In October 2000, individual Pilot Base web sites were developed for SWA Pilots. The first Pilot Base was BWI, then MDW and then MCO. Within a year all seven Pilot Base web sites were on-line. The sites were developed using Microsoft FrontPage. The Pilot Base sites started out small with just local information and hotels. As they became more well-know, they slowly grew in depth and scope (exhibit 3). By summer 2001, I

developed an Irregularity Report form (exhibit 4) for the Base web sites that emailed a copy of the IR directly to the Pilot Base Coordinators and Chief Pilots. The Pilot Base Coordinators were then able to "cut and paste" IR's into the Script system, saving a significant amount of time. By January 2003 all IR's were required to be submitted through the Pilot Base Web sites. Unfortunately the FAA Birdstrike Report form had to still be manually filled out and dropped off to the Pilot Base Coordinator and sent into the FAA. Birdstrike reporting rates did increase a little bit.

In the spring of 2004, Capt Becky Howell (SWA Capt and SWAPA Safety Rep) asked me to take a look at the online FAA Birdstrike Report form. She also referred me to the form's developer, Allen Newman of Embry-Riddle Aeronautical University (Prescott). Allen had developed an online Birdstrike Report form for the FAA. Once submitted, the online form would email all required information to the FAA. After my review of this form, I realized I could adapt this form to fill out an online report and email the results both to SWA and the FAA. Allen created a new Birdstrike Report form for SWA so that the form would have a selectable base option and created the code to process the data that I sent him. I created a mail list for each Pilot Base, built a birdstrike web page for each Pilot Base site and we were in business. The Pilot could fill out an IR report; submit it, and receive a confirmation page (exhibit 5). The confirmation page displayed a "birdstrike button"; if the IR was for a birdstrike the Pilot would toggle it and would then be taken to the special SWA FAA Birdstrike Report form (exhibit 6). Once filled in, the Pilot would click "submit" and automatically send emails to the FAA, his Pilot Base Coordinator, his Pilot Base Chief Pilot, himself, and the SWA Birdstrike Coordinator. With this development, Birdstrike reports were totally electronic for the first time! If a birdstrike occurred during the day, the Captain could have all of his reporting requirements completed that night while the details were still fresh in his mind.

In January 2006 the Southwest Irregularity Reporting System (SOPI) (exhibit 7) was deployed, putting the IR submission process on-line. IR's were now submitted through the Company SWALife web portal, and initiated The SOPI system included an improved review process for IRs and replaced the slow, labor intensive system that previously was in place. The Pilot could now go on-line and directly submit his IRs through the SOPI system. Pilot Base Coordinators are no longer required to "cut and paste" from the email IR inputs. Furthermore, SOPI permitted management at both the Pilot Base and Headquarters levels to review the IR's as they progress through the system.

However, one facet not taken into consideration was the Birdstrike Report. In September 2005, when the impact of this oversight was realized, SWA Flight Operations requested that I develop a "work around" solution. Although the email IR system was removed from the Pilot Base web sites in January 2006, the Birdstrike Report remained on the Pilot Base sites. Within the SOPI system, if a Pilot selected the "Birdstrike" category for an IR, a "pop up note" appeared directing the Pilot to their Pilot Base web site. This "work around" remained until January 2007.

A redesign of the SWALife Flight Operations Tab was begun in mid-2006. This redesign included absorption of the individual Pilot Base web sites. The Flight Ops tab was to

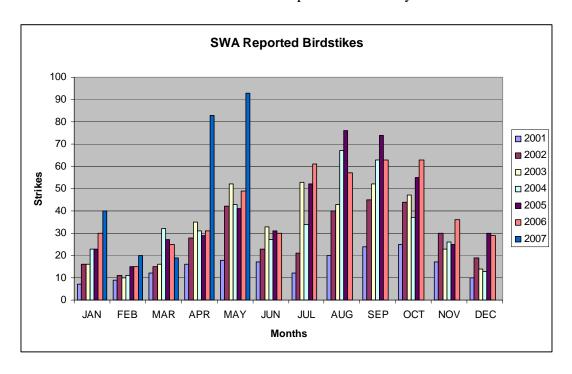
offer "one-stop shopping" for all Pilot information and reports. The migration was completed in January 2007. Since the individual Pilot Base web sites would be eliminated, the FAA Birdstrike Report form obviously needed to be integrated into the SOPI system. Once again, we turned to Allen to "massage" the back end of his on-line form. Instead of the form residing on our website, we created a call from his site where the new form would reside. If the Pilot selects Birdstrike (exhibit 8) for a category, a new box appeared asking for the FAA Birdstrike Confirmation number. A link was also created to the Birdstrike Report form on the Phoenix servers. The Pilot would select Birdstrike, then select the link, and fill out the FAA form. Once the FAA form was completed, a FAA Birdstrike confirmation number was generated. The Pilot would then "copy and paste" this number into the SOPI IR form. The FAA servers would automatically transmit emails to the FAA Birdstrike office; the Pilot's Chief Pilot; the SWA Birdstrike Manager; and back to the Pilot.

Results

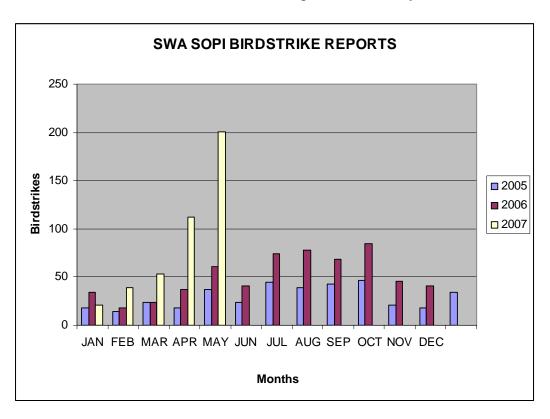
From the chart below, it is clear that the number of birdstrike reports have increased over time. From January 2001- July 2004, birdstrikes reports were submitted manually. From July 2004 - Jan 2006, IR and birdstrike reports were made through the individual Pilot Base web sites. In Jan 2006 IRs and Birdstrike reports were separated: IRs submitted on SWALife the birdstrike reports via the Pilot Base web sites.

Finally, in Feb 2007, both IRs and birdstrike reports could both be submitted through SWALife -- a "one-stop shopping" reality for Pilots. The results are clearly evident in the sharp increased in the number of reported birdstrikes beginning in April 2007. This increase can largely be attributed to a programming change in SOPI that prevented submission of a Birdstrike IR without containing the FAA birdstrike report confirmation number.

SWA Pilot Birdstrike Reports Received by the FAA



SWA Pilot Birdstrike Reports Received by SOPI



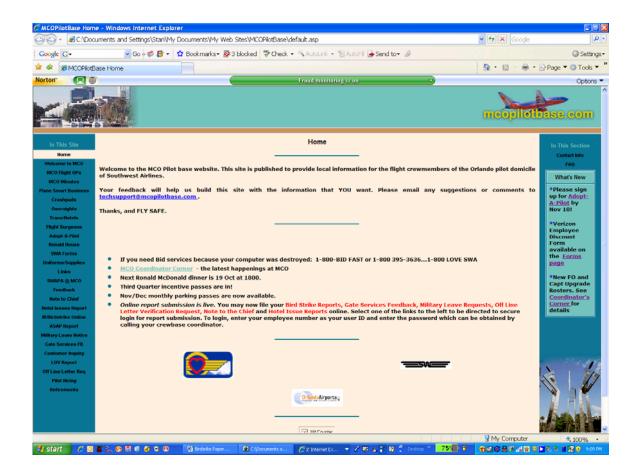
The current system incorporated by SWA is a notable success and reporting has increased dramatically. We still have improvements to make. The first is to automatically complete data input from the SOPI IR form on the FAA Birdstrike Report form when the same data elements are required. The second is to add an automatic cross-check between the aircraft maintenance logbook and the SOPI IRs submitted for birdstrikes. Simply said, Pilot participation increases when the system makes it easier for them to comply.

Form Approved OMB NO. 2120-0045

Federal Aviation Administration 1. Name of Operator	2. Aircraft Make/f	2. Aircraft Make/Model		3. Engine Make/Model		
4. Aircraft Registration	5. Date of Inciden	t		6. Local Time of Incid		
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B. Taxi	B. Windshield			I. Wing/Rotor		
C. Take-off Run	C. Nose			J. Fuselage		
D. Climb	D. Engine No. 1	. _		K. Landing Gear		
E. En Route	E. Engine No. 2	2 I 🗆		L. Tall		
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14. Effect on Flight	15. Sky Condition			16. Precipitation		
☐ None	☐ No Cloud			☐ Fog		
☐ Aborted Take-Off	☐ Some Clo	ud		Rain		
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☐ Engines Shut Down				☐ None		
Other: (Specify)						
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	When reporting bird aircraft	strikes, please submit bird remains for ide	ntification. Place the feathers and	
	other material in a clean plas	tic zip-lock bag, and send routine cases to INH, E-610, MRC 116, Washington DC, 2001	Dr. Carla Dove, Smithsonian	
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